RECORD OF ORAL HEARING

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ANDREW MARK NIGHTINGGALE
and
ALISTAIR CRONE BRUCE

Appeal 2007-2701
Application 10/079,811
Technology Center 2100

Oral Hearing Held: September 12, 2007

Before ANITA PELLMAN GROSS, JOSEPH F. RUGGIERO, and ST. JOHN COURTENAY, III, *Administrative Patent Judges.*

ON BEHALF OF THE APPELLANTS:

STANLEY C. SPOONER, ESQ.
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The above-entitled matter came on for hearing on Wednesday, September 12, 2007, commencing at 10:22 a.m., at The U.S. Patent and Trademark Office, 600 Dulany Street, Alexandria, Virginia, before Laurel P. Platt, RDR, CCR No. 0313203, Notary Public.

THE CLERK: Appeal number 2007-2701.

JUDGE GROSS: Good morning.

MR. SPOONER: Good morning. Stanley Spooner for Arm Limited Computer Design Company in the UK.

The issue and the invention is with respect to computer chip designs and being able to test both software and hardware on a design. Normally you couldn't do that until you had actually come up with the software and then put the software on a field programmable gate array, some hardware, and then you would actually test that design on that chip.

JUDGE COURTENAY: Can you tell me what an IT block is?

MR. SPOONER: Excuse me?

JUDGE COURTENAY: Can you explain what an IT block is?

MR. SPOONER: Offhand, I can't.

JUDGE COURTENAY: Well, it's on page 2 of your specification and also page 3.

MR. SPOONER: Let me look there then.

I can't help you. It's not something that's on the tip of my tongue.

JUDGE COURTENAY: I was hoping you might be able to enlighten me on that, but go ahead.

MR. SPOONER: Okay. So the conventional way to test these was the same way in which Hollander tests these. They basically take the entire device under test, provide inputs to it and then have a predicted output. And that's how they simulate it.

A better way to test it is what Arm has come up with. And if I can use the analogy of an automobile, if you're going to simulate an automobile, you might have the driver input which could be steering, brakes, and accelerator or the pedal. And they would all go into components of the car.

Then those components would have an output that would affect what the ultimate car does, whether it turns, how fast it goes, how fast it decelerates. This would all be the device under test in the Hollander device.

What the current invention does, it still provides the steering, brakes, pedal, but it also provides for interrelationships between these.

So that where the accelerator pedal will have an effect on the steering -- for example, you're in a hard corner, and you give it a lot of gas. If it's a rear-wheel drive car, the back end may slide out around you. This probably happens when you are driving in the snow.

It doesn't happen in front-wheel drive cars because that just causes the front wheel to understeer, to plow straight ahead.

But it's the interaction between these things that you also need to include. And then you take your outputs to the overall device, and then it works in whatever predicted manner you want.

And so Hollander is modeling a car by just modeling the inputs to and the expected output from the device under test.

The claimed invention is modeling these separate things. If you will, this one might be software. This one might be hardware. This one might be hardware. At least one software, at least one hardware component. They are modeled and their inner relationship is modeled, and that's what provides the output, and that's why it's more accurate.

JUDGE COURTENAY: Can you point to the portion of your claim, claim 1, for example, that brings that out?

MR. SPOONER: Sure. Claim 1, the first point is modeling operation of the software component using a software simulator.

All right. That's probably done in Hollander, but the examiner couldn't identify where, and where he pointed to doesn't. And of course,

item 2 is modeling the operation of the hardware component using a hardware simulator.

JUDGE COURTENAY: On page 11 of your brief, you point to a more pertinent portion. Are you conceding that limitation is taught by the primary reference?

MR. SPOONER: Ask that again now? Page 11?

JUDGE COURTENAY: Yes. You just made a statement that limitation Roman numeral (i) of claim 1 was probably done by the primary reference. On page 11 when you say a more pertinent portion of the Hollander reference is believed to be column 10, line 24, are you admitting that limitation?

MR. SPOONER: No. I'm just saying that that portion of Hollander may be more pertinent. But my position is that the examiner is under an obligation to establish a prima facie case by showing where each of the claimed elements exists in some prior art reference and then to provide some reason for combining.

JUDGE COURTENAY: But didn't you just state that this limitation (i) was probably done by the Hollander reference in your remarks here just a moment ago?

MR. SPOONER: I just said that, yes. I said it's probably. But the examiner hasn't identified where, and I don't know where.

JUDGE COURTENAY: So you are not admitting.

MR. SPOONER: No.

JUDGE COURTENAY: Okay. And you're not pointing to this column 10 section.

MR. SPOONER: I'm saying that is believed to be more pertinent than what the examiner recited, but I am not conceding that that is a modeling of software.

JUDGE COURTENAY: Can you distinguish the more pertinent portion in column 10 from your claim language?

MR. SPOONER: Hollander. All right. Hollander at 24 to 28, column 10, says to perform code verification using the invention. The user first creates a cycle-accurate model of the hardware apparatus on which the external software program is to be run.

That says nothing about what is stated in item (i) of the claim which says, quote, modeling operation of said software component using a software simulator.

JUDGE COURTENAY: Okay. Your position is the reference is not used with the software simulator?

MR. SPOONER: Absolutely.

JUDGE COURTENAY: Okay.

MR. SPOONER: All right. So continuing on, you asked about other features that distinguish. We've picked up three of them. There may be others. This is certainly not exclusive.

But item (iv), the generating with the test controller, certainly there is generation that goes on, whether it's with a test controller and whether it does the last bit in the claim, proceeds independently of said test controller. In other words, that's the model interaction between the software component and the hardware component.

We have repeatedly asked the examiner, tell us where this happens, show us, identify it, and he's not done it.

The third one, item (vi), modeling the response of the hardware component to the hardware stimulus. It may do that, but the last bit of that section, it says: Wherein the software stimulus is passed to said software simulator by issuing a remote procedure call from the test controller to the software simulator.

That's a way in which you provide this software stimulus to the software simulator.

And he's not pointed out -- he's admitted that Hollander doesn't teach that. He suggests that Platt teaches it.

Now, Platt does use a call in there, but there's no indication that he's using that call to provide software stimulus to a software simulator. It's just not there.

So I mean those are three that we have -- three items that we have identified with respect to the Hollander and Platt references. Hollander and Platt are cited in combination for the three independent claims, 1, 15 and 16.

If that rejection is unsupported under Section 103, then the other dependent claim rejections all fall. Our view is that the examiner has simply failed to disclose any of those three components that we've identified.

Item (i), in his cited portion -- now, this is the modeling of operation of a software component using a software simulator. He cites column 8, lines 39 to 44. That's a reporting function, that portion of Hollander.

He suggests that column 10, lines 51 to 58 discloses that. There's nothing to do with modeling there.

So how he concludes that discloses the claim language of modeling operation of said software component using a software simulator, we don't know. And we've asked him repeatedly in amendments, in the preappeal brief supporting statement, in the appeal brief, and in the reply brief.

Item (iv), the issue of the generating step where the modeled interaction between the software component and the hardware component proceeds independently of the test controller. That's not in Hollander. The cited portion of Hollander, column 5, lines 21 to 24, and column 8, lines 24 to 32, have nothing to do with that step.

And thirdly -- I think I have mentioned it -- this remote procedure call, that's step (vi), the modeling step. The issue there is this interrelationship. It says software stimulus is passed to the software simulator by issuing a remote procedure call. That's just the way in which the interaction occurs.

Again, positively recited, the examiner has referenced another prior art reference, Platt, which talks about a call, but he doesn't identify what that call is used for, how it relates to software stimulus, how it goes to a software simulator. It's not there.

The important thing is while he suggests that Platt teaches that third item that I've identified, item (vi), he doesn't allege or provide any evidence to suggest that those missing elements are disclosed in any of the other cited prior references. I think it's Campbell and Harmon.

So really we are just looking at those two references, Hollander and Platt, to see if the claim subject matter is disclosed in there, in the independent claims, and then more importantly, to see if there's some reason to combine them.

Now, I'm not going to go into the misstatements in the examiner's answer because I think we responded to those in the reply brief.

But he misquotes portions of the claim and then says that those misquoted portions are disclosed in these prior references. But if you have any question, please look at the reply brief because it debunks those theories.

We've asked him to point out how or why there would be any reason

to pick and choose bits from Hollander and Platt, assuming that they are disclosed. Why would one do it? Neither one is directed to the problem that we are solving, getting a more accurate representation of a simulation of a design that involves both hardware and software. He doesn't respond to it.

He just says that because Platt teaches using a call to increase the speed of the device, Platt's device, which doesn't relate to software simulators or stimulus for software simulators, he says that it would be obvious to combine that with Hollander if you wanted a faster device.

That's sort of like saying that it would be obvious to combine -- use grease on anything if you wanted to make it faster, whether or not it makes something faster. I mean it's just a non sequitur almost.

In his answer he doesn't really respond to the appeal brief, so it's tough to rebut his arguments in the answer. I think we've covered most of them.

The KSR case, everyone initially thought that that was going to be a big change in how obviousness rejections are handled, but there's nothing that changes the fact that the burden is on the examiner to establish the prima facie case first. He's got to show where the bits are in a plurality of references.

Margaret Focarino, who is the Deputy Commissioner for patent operations, still says that it remains necessary for an examiner, quote, to identify the reasons why a person of ordinary skill in the art would have combined the prior art elements in the matter claimed.

It still exists. There's got to be some reason. Now, you may not have to be able to point to a written reason somewhere, but there has to be something as to why one would pick and choose bits and pieces and combine them in a claimed manner. And he's not identified those.

So in summary, I just don't think he's made the prima facie case. He's admitted a number of specifically claimed elements. He's not indicated that the claims are indefinite or that he doesn't or one of ordinary skill in the art wouldn't understand those.

The fact that I am not one of ordinary skill in the art, as evidenced by my inability to answer your question on IP block; however, I suspect that that is an item that is well known to those of ordinary skill in this art.

That issue has never come up before. And so clearly we could address it if given the opportunity in prosecution to provide the appropriate documentation.

So in summary, he's just not made the case. It's not supported under current law, and it's not supported by the prior art.

Any other questions?

JUDGE COURTENAY: Thank you very much.

MR. SPOONER: Thank you for your attention. I appreciate it.

JUDGE GROSS: It's good to see you again, Mr. Spooner.

MR. SPOONER: It's nice to see you, Judge.

(Whereupon, the proceedings at 10:40 a.m. were concluded.)